
JO DAVIESS
STEPHENSON
WINNEBAGO
BOONE
MC HENRY
LAKE
CARROLL
OGLE
DE KALB
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COOK
WHITESIDE
LEE
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LA SALLE
BUREAU
KENDALL
GRUNDY
ROCK ISLAND
MERCER
HENRY
PUTNAM
KANKAKEE
KNOX
STARK
MARSHALL
LIVINGSTON
WARREN
PEORIA
IROQUOIS
WOODFORD
HENDERSON
MC LEAN
FULTON
HANCOCK
MC DONOUGH
FORD
TAZEWELL
VERMILION
MASON
CHAMPAIGN
LOGAN
DEWITT
SCHUYLER
ADAMS
BROWN
CASS
MENARD
PIATT
MACON
PIKE
MORGAN
DOUGLAS
EDGAR
SCOTT
MOULTRIE
CHRISTIAN
SHELBY
COLES
SANGAMON
GREENE
MACOUPIN
CLARK
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CALHOUN
MONTGOMERY
CUMBERLAND
JERSEY
FAYETTE
EFFINGHAM
JASPER
CRAWFORD
MADISON
BOND
RICHLAND
LAWRENCE
MARION
CLINTON
CLAY
WAYNE
EDWARDS
WABASH
JEFFERSON
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ST. CLAIR
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RANDOLPH
PERRY
FRANKLIN
JACKSON
SALINE
GALLATIN
WILLIAMSON
UNION
JOHNSON
POPE
HARDIN
ALEXANDER
PULASKI
MASSAC

APPLE CREEK NEAR BELLTOWN **ISGS #62**
POTENTIAL WETLAND COMPENSATION SITE
FAP 310
Greene County, Illinois
Primary Project Manager: Bonnie J. Robinson
Secondary Project Manager: Kelli D. Weaver

SITE HISTORY

- October 2001: ISGS submitted an Initial Site Evaluation report.
- December 2001: ISGS was tasked by IDOT to conduct a Level II hydrogeologic assessment of the site.
- April–August 2002: Eighteen shallow wells, two surface-water level loggers, two staff gauges and one rain gauge were installed on site.
- February 2004: A Level II hydrogeological characterization report was submitted to IDOT.

WETLAND HYDROLOGY CALCULATION FOR 2004

The total area that satisfied wetland hydrology criteria for greater than 5% of the growing season was estimated to be 21.7 ac (8.8 ha), whereas the area that satisfied wetland hydrology criteria for greater than 12.5% of the growing season in 2004 was estimated to be 15.8 ac (6.4 ha). The estimates for 2004 are based on the following factors.

- According to the Midwestern Climate Center, the median length of the growing season, as measured at the White Hall climate station, is 210 days (April 6 to November 2); 5% of the growing season is 11 days and 12.5% of the growing season is 26 days.
- Total precipitation during the monitoring period was 120% of normal. Despite above normal precipitation in September, a drying trend was observed onsite until low evapotranspiration rates coupled with above normal precipitation occurred in November 2003. Near normal precipitation in December 2003 and January 2004 kept water levels reasonably stable through most of the winter. Below normal precipitation in February 2004 (35% of normal) resulted in a decrease in water levels until they rebounded in response to near to above normal precipitation in March through May 2004. Despite above normal precipitation in July and August, water levels declined throughout the summer as a result of high evapotranspiration rates.
- In 2004, water levels measured in wells 1S, 2S, 3S, 6S, 8S, 10S, 12S, 13S, 14S, 15S, and 18S satisfied the criteria for wetland hydrology for greater than 5% of the growing season. All the above wells, with the exception of 15S, also met the criteria for wetland hydrology for greater than 12.5% of the growing season. Surface-water levels inside the levee at RDS1 indicate that surface inundation occurred to an elevation of 136.121 m (446.591 ft) for greater than 5% of the growing season and greater than 136.105 m (446.539 ft) for 12.5% of the growing season.
- The water level in Apple Creek did not reach an elevation sufficient to overtop the levee during the entire monitoring period. Measurements in the creek indicate that the water level

exceeded 138.0 m (450.8 ft), on only one occasion, November 18 through 21, 2003. This is the suggested elevation of the notch in the southern levee after restoration as proposed in the Level II report (Robinson 2004).

- Limitations of the wetland hydrology determination are as follows:
  - The area meeting wetland hydrology criteria was derived from a mathematical interpolation of the shallow ground-water surface derived from water level readings at the monitoring wells.

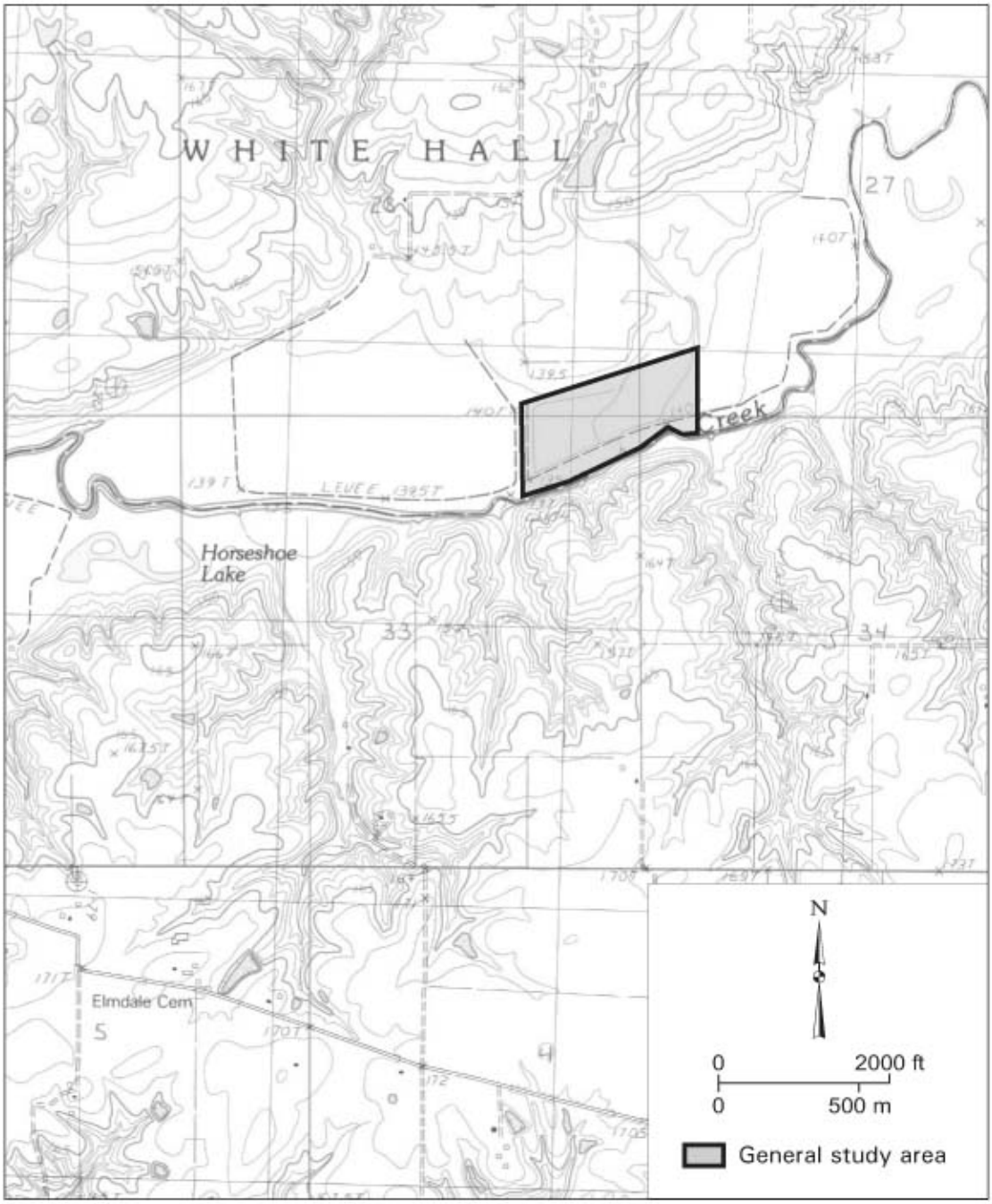
REFERENCES

Robinson, B.J., 2004, Level 2 Hydrogeologic Characterization Report: Apple Creek near Belltown, Greene County, IL (US 67, FAP 310): Illinois State Geological Survey Open File Series 2004–5, 24 p.

Apple Creek Potential Wetland Compensation Site
(US 67, FAP 310)

General Study Area and Vicinity

from the USGS Topographic Series, Carrollton, IL 7.5-minute Quadrangle (USGS 1983)
contour interval is 10 feet



Apple Creek Potential Wetland Compensation Site

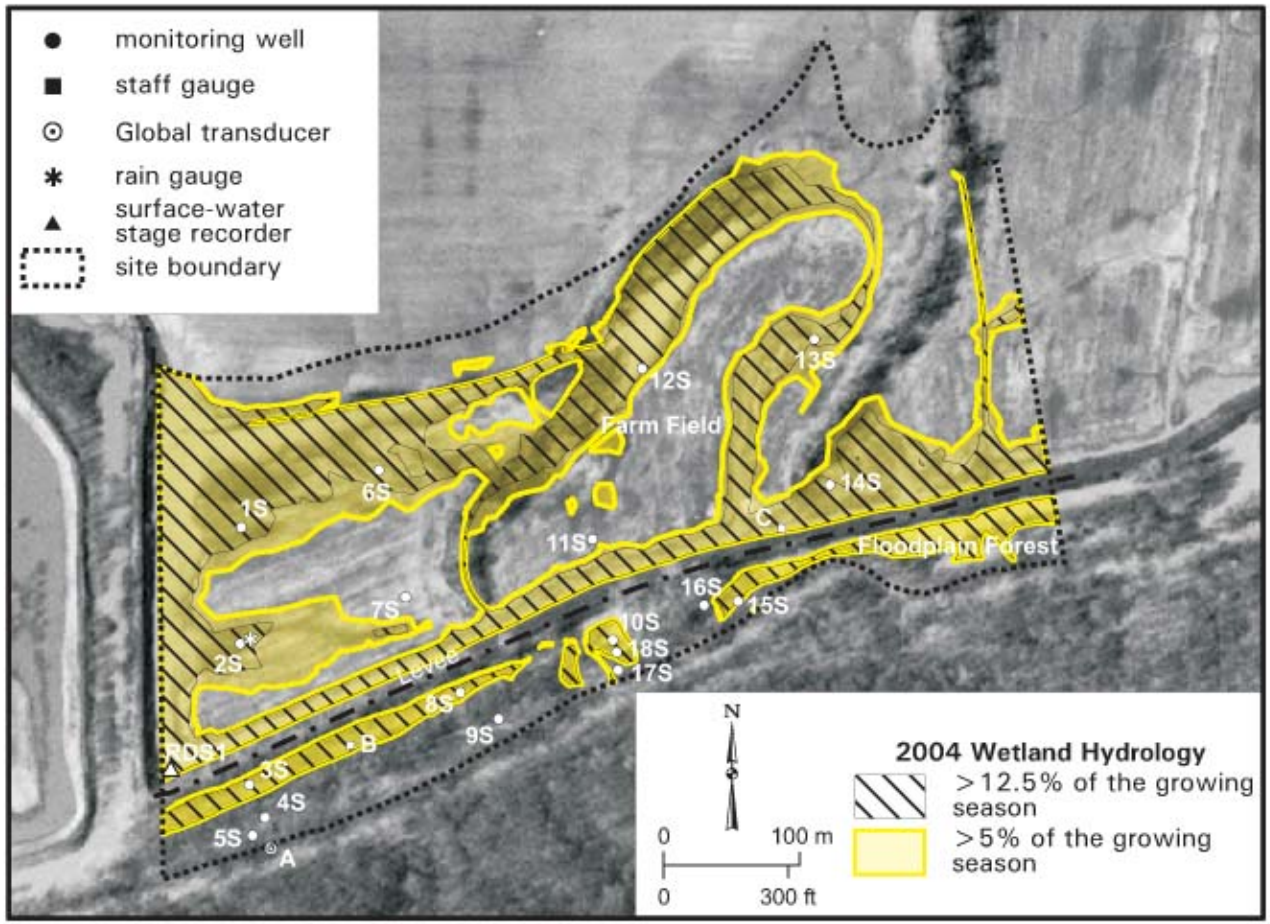
(US 67, FAP 310)

Estimated Areal Extent of 2004 Wetland Hydrology

based on data collected between September 1, 2003 and September 1, 2004

map based on USGS digital orthophotograph, Carrollton NE quarter quadrangle

quadrangle produced from 4/5/1998 aerial photography (ISGS 2001)



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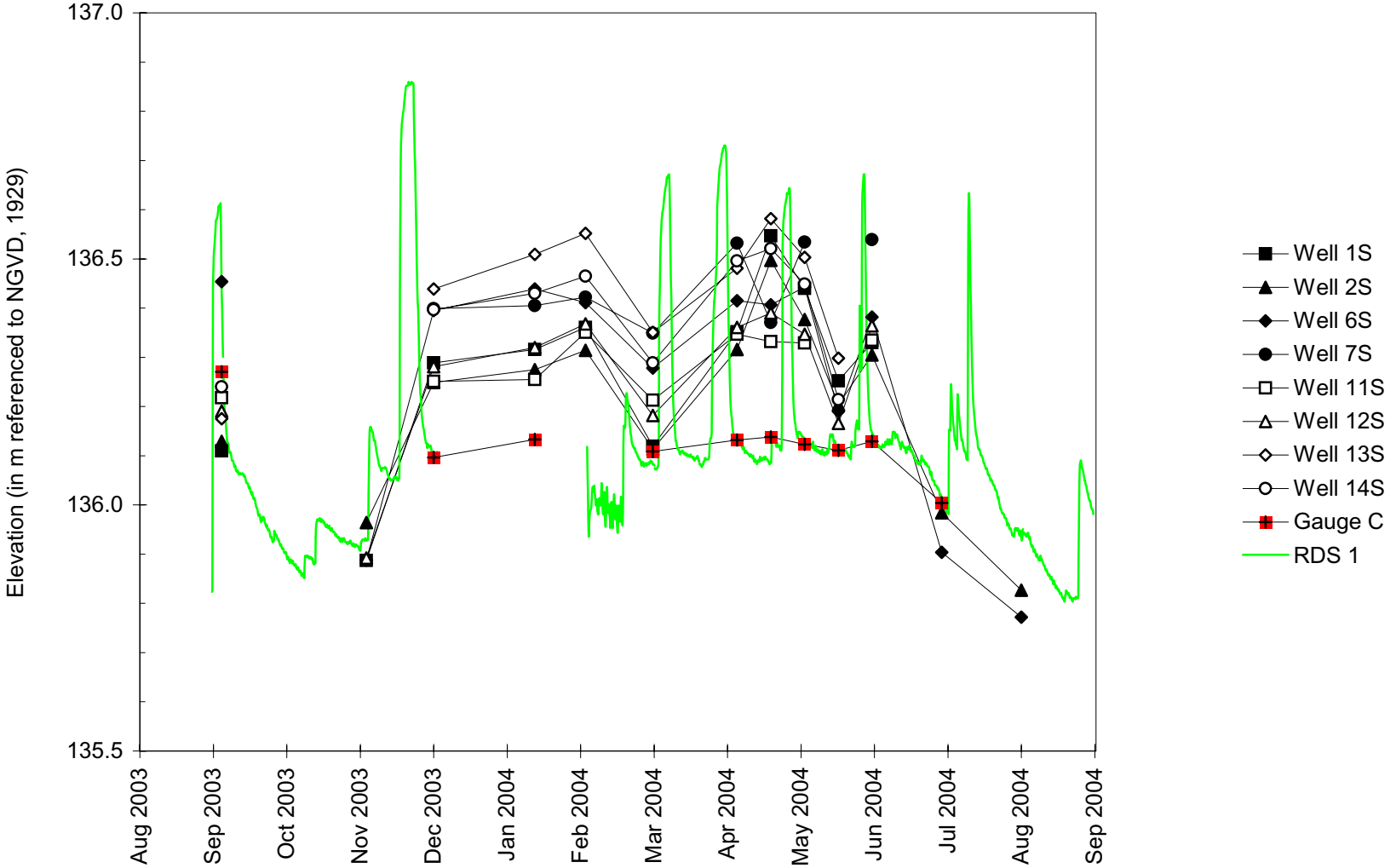
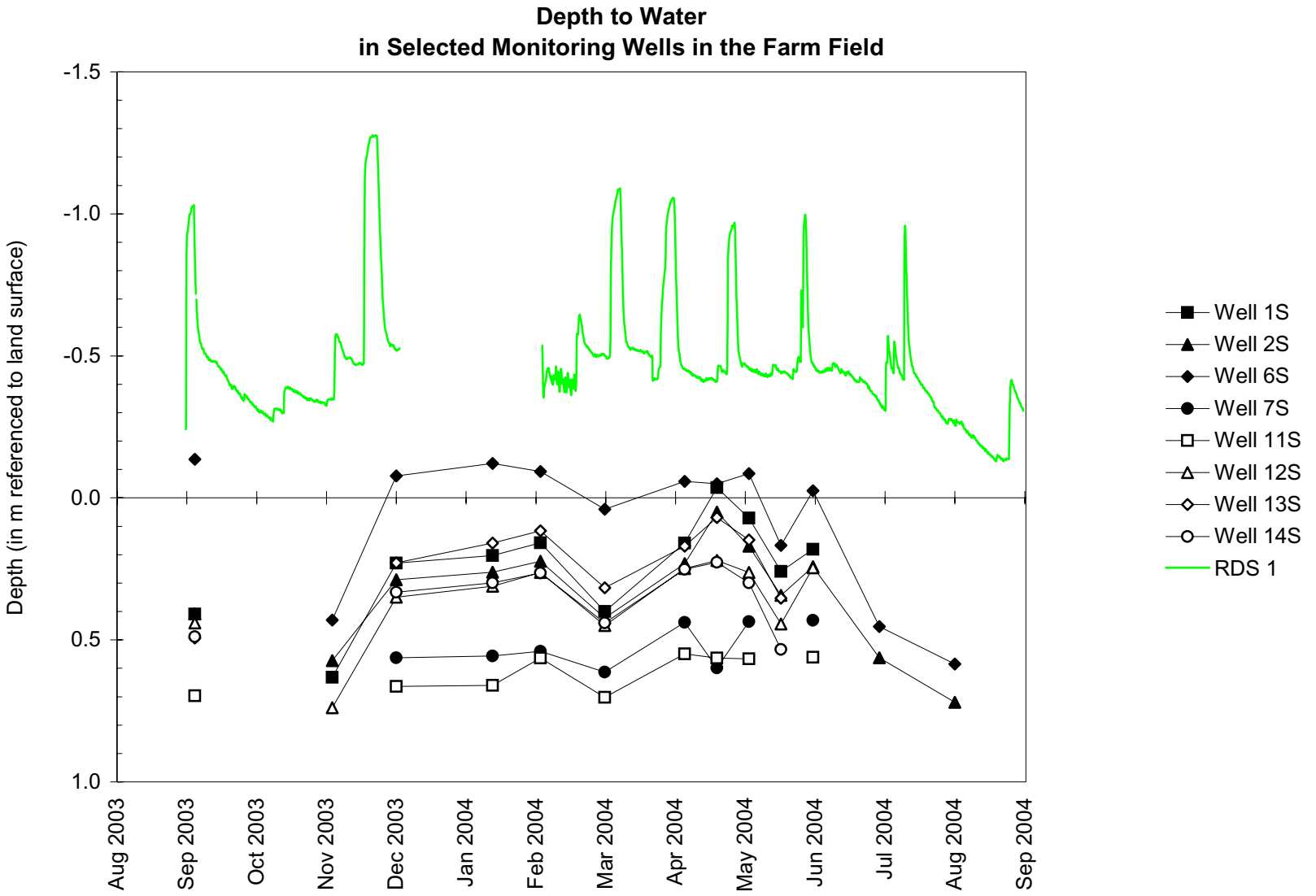
Apple Creek Potential Wetland Compensation Site

September 1, 2003 to September 1, 2004

Water-Level Elevations in Selected Monitoring Wells in the Farm Field

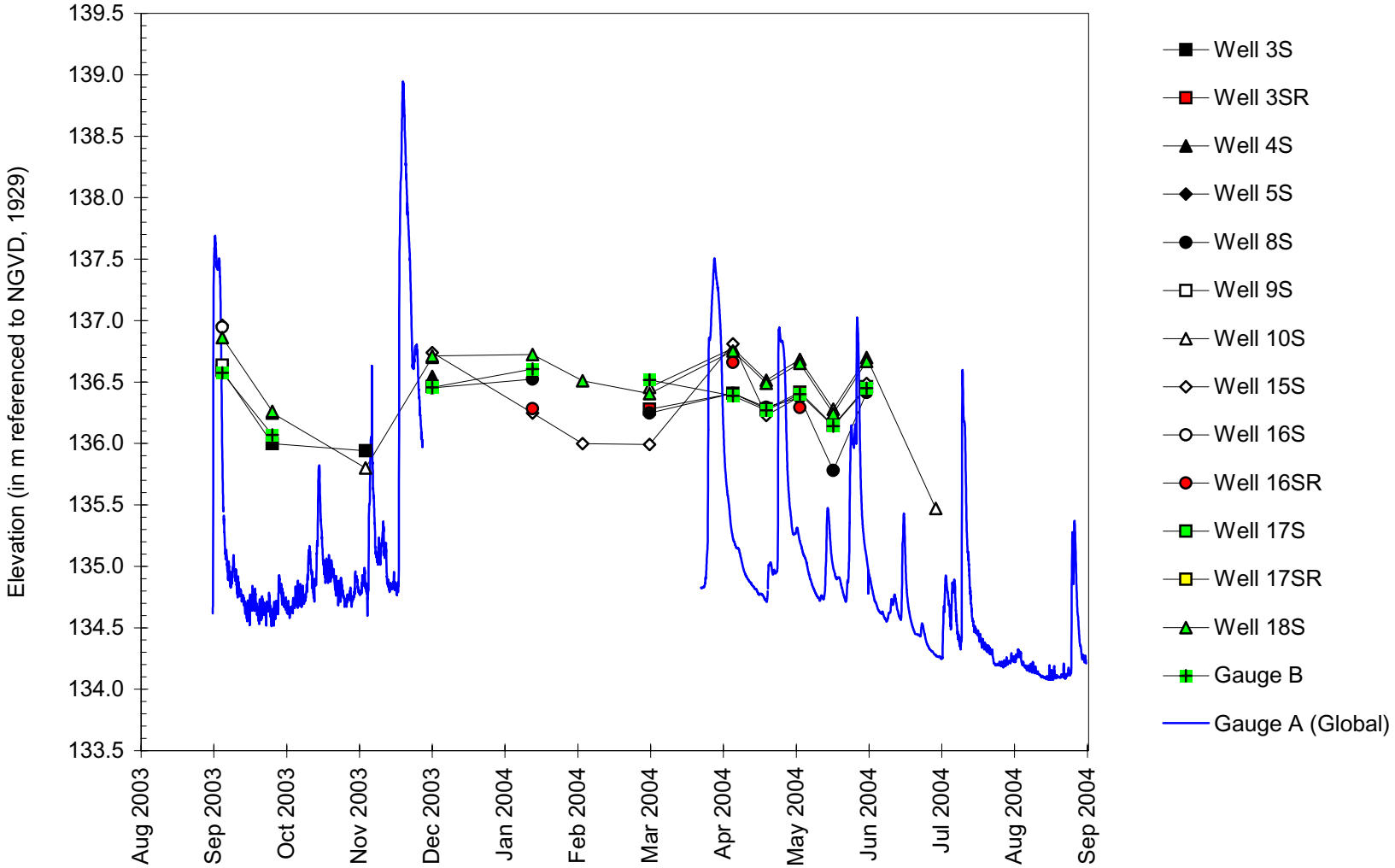


Apple Creek Potential Wetland Compensation Site
September 1, 2003 to September 1, 2004

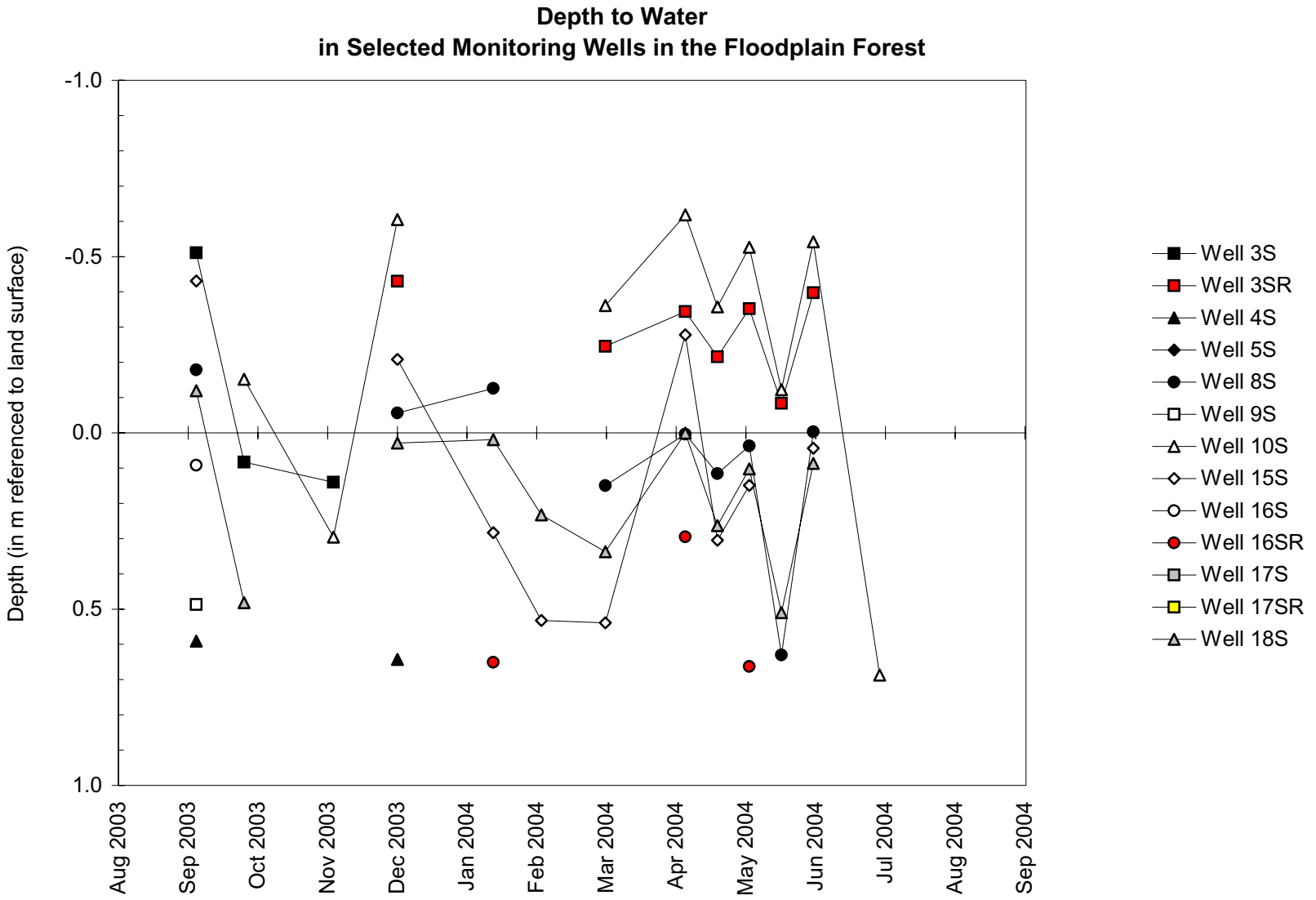


Apple Creek Potential Wetland Compensation Site
September 1, 2003 to September 1, 2004

Water-Level Elevations
in Selected Monitoring Wells in the Floodplain Forest

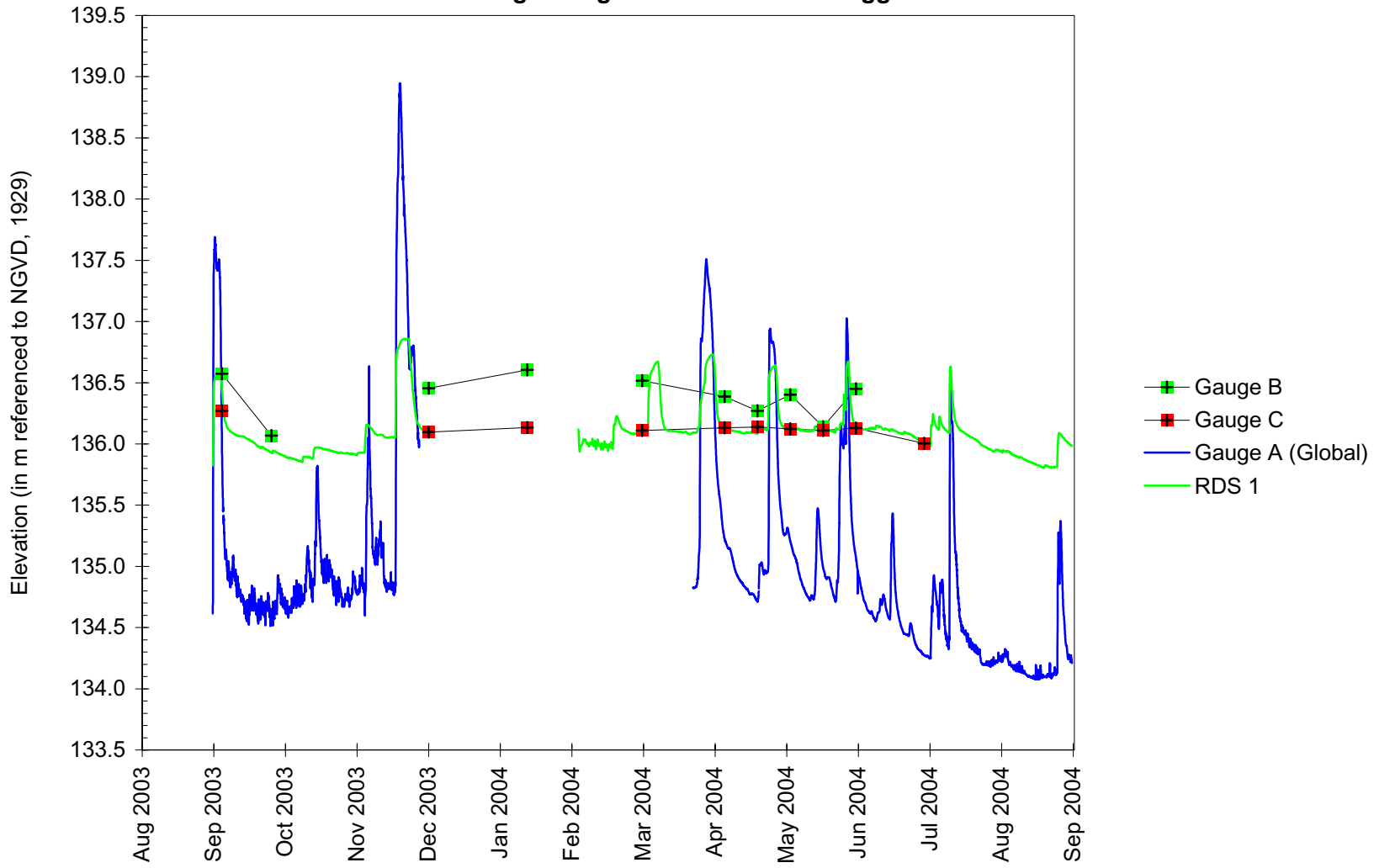


Apple Creek Potential Wetland Compensation Site
September 1, 2003 to September 1, 2004

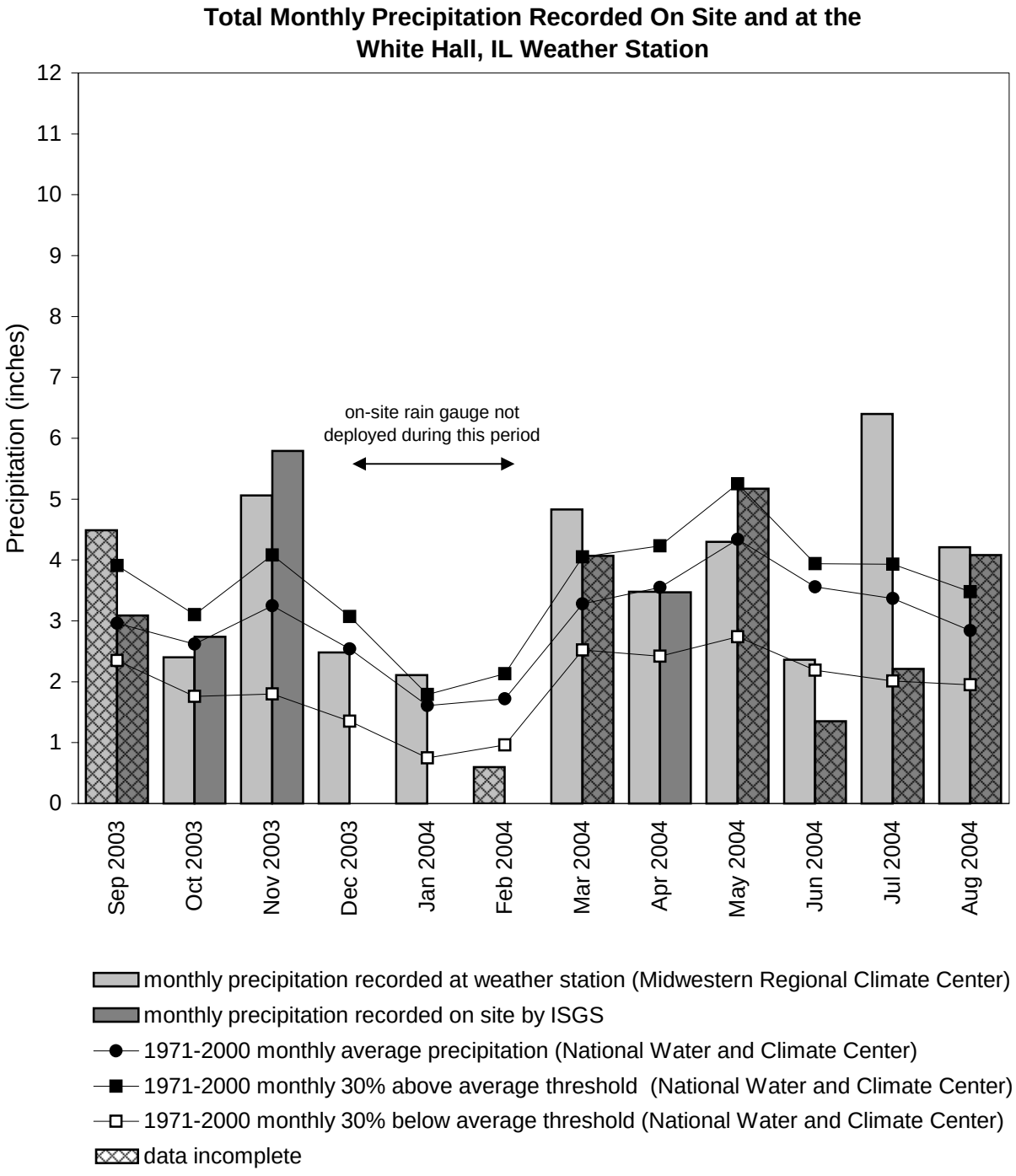


Apple Creek Potential Wetland Compensation Site
September 1, 2003 to September 1, 2004

Water-Level Elevations
on the Stage Gauges and at the Data Loggers



Apple Creek Potential Wetland Compensation Site
September 2003 through August 2004



Graph last updated October 1, 2004